From:	PETERSON Jenn L
To:	Chris Thompson; Robert Gensemer
Cc:	Eric Blischke/R10/USEPA/US@EPA; Joe Goulet/R10/USEPA/US@EPA; Chip Humphrey/R10/USEPA/US@EPA; Jeremy_Buck@fws.gov
Subject:	RE: Fw: UCR fish sampling design statistics from John Skalski (UW statistician)
Date:	02/15/2006 12:54 PM

FYI - the e-mail below is from Jeremy which nicely summarizes our discussions in Centralia.

-----Original Message-----
From: PETERSON Jenn L
Sent: Wednesday, February 15, 2006 12:51 PM
To: 'Jeremy_Buck@fws.gov'; Goulet.Joe@epamail.epa.gov
Subject: RE: fish sampling/health assessment

I thought we were also going to get some more composites of pikeminnow in order to increase our current sample size. The rest is basically what I have in my notes with the same questions about exact composite numbers, and how to do different size classes of sm bass.
-----Original Message-----
From: Jeremy_Buck@fws.gov [mailto:Jeremy_Buck@fws.gov]
Sent: Wednesday, February 15, 2006 12:27 PM
To: Goulet.Joe@epamail.epa.gov
Cc: PETERSON Jenn L
Subject: fish sampling/health assessment

Here's what I am thinking based on our Centralia meeting, given the following assumptions:

1) Bruce H says he does not need individuals (but does he need a representation of size class??)

So, ALL samples will be composite samples except some smallmouth bass (and I would be fine with other individuals if some people want that)

Sucker: To represent a large-ranging fish and in risk assessment for fish-eating birds/mammals

12 composite samples of 3 (or better 5?) fish each within 10% (or similar number) length or width (I raised total samples from 10 to 12 due to the huge difference in PCB values found in the existing samples, so I think the existing samples may show an unrealistic central tendency to base exposure for higher receptors for PCBs)

Each fish in the composite has stomach contents removed and collected and composited (1 sample of 3 stomach contents per site). Sex will be determined on all fish where stomach contents removed.

Each fish has an external fish health assessment conducted on it based on BEST protocols, with abnormalities noted and photographs and pieces clipped off and placed in formalin for histological analysis to determine if trauma based and to characterize abnormality. Each fish that has stomach removed also has a liver clipped out for lesion assessment (if we decide to do this-keep in proposal for now).

Also, external fish health assessment with tissues clipped for histology will also be conducted on sucker "bycatch" on any size sucker, with a target of 10 individuals per site (3 can be used for composite sample, 7 others are just for fish health assessment with no liver and no stomach contents). Discard or return live to water fish not used in chemical analysis (after fish health assessment).

Stomach contents: PAHs and metals only
Composite: diox/furans/PCBs/OC chemicals, metals, phthalates (PBDEs?)
Tissue abnormalities: Histology

Questions: I think we might want to raise the composite number from 3 to 5 or 6 to get enough stomach contents, but how many did they composite per site in the first round and should we remain comparable?

Smallmouth bass: For localized site determinations/risk assessment

We want (15? 18? 20?) samples, composite samples of at least 3 (or maybe 5?) fish within 10%? length or mass. A fish health assessment will be conducted in the same manner as suckers, with a target number of 10 health assessments per site (size irrelevant, use bycatch and target up to 10 individuals per site. Discard fish not used in chemical analysis). Sex will be determined on all fish with stomach contents collected.

To get an idea of size class differences in smallmouth bass, each site will have a representation of largest fish and smallest fish as separate (individual or composite?) samples, so each site will have 3 analysis per site of different size class fish (is this what we decided to do?)

Stomach contents: PAHs and metals only
Composite: diox/furans/PCBs/OC chemicals, metals, phthalates (PBDEs?)
Tissue abnormalities: Histology (with liver assessment?)

Sculpin: For localized site determinations/risk assessment, native fish less mobile than bass and to represent areas where insufficient bass can

be found.

All composite samples (based on however many we decided on) to better capture site specific differences
More rigorous effort to capture sculpin in localized/representative areas, possibly with the use of baited traps
no fish health assessment
no stomach contents analysis
routine chemicals -diox/furans/PCBs/OC chemicals, metals, phthalates (what about PAHs? What about PBDEs)

Sturgeon:

Sample as however we decide and conduct fish health assessment depending on how caught, and conduct stomach analysis for PAHs and metals.

What other fish did we say we want to sample?

-----Original Message-----
From: Chris Thompson [mailto:chris.thompson@eiltd.net]
Sent: Wednesday, February 15, 2006 12:53 PM
To: Robert Gensemer
Cc: PETERSON Jenn L; Blischke.Eric@epamail.epa.gov; Goulet.Joe@epamail.epa.gov; Humphrey.Chip@epamail.epa.gov; Jeremy_Buck@fws.gov
Subject: Re: Fw: UCR fish sampling design statistics from John Skalski (UW statistician)

Robert Gensemer wrote:

> Joe: Thanks for sending this.
>
> I've always thought that a formal, statistically-based design would be
> preferrable in helping identifiy numbers of samples needed for
> critical data needs. However, the kind of design used for UCR would
> only be relevant to PH *IF* we were to change our proposal to quantify

> differences in fish tissue concentrations between particular
> sub-sections or reaches within the ISA, rather than an ISA-wide
> analysis as has been done to date. We talked about this some last week

> in Centralia, but as a group I think we decided to hold off on such a
> design until we saw what the FWM data needs really were.
>
> At this time, my best understanding from new converations with Bruce
> is that the FWM would be best served by having composite tissue
> samples in each of the main river reaches, rather than individual fish

> samples or, perhaps, replicated composite samples. The original design

> as mapped out a few weeks ago does do this. So, no statistics would be

> needed, really.
>
> So which direction do we want to take here? At the moment, the SOW
> document reflects the latter, non-replicated design. If instead we
> want to go for a replicated design to compare fish tissue
> concentrations in sub-sections of the ISA, we need to have additional
> discussions as to the AOPCs of most interest with respect to the ERA
> and RI/FS, statistical power we want, etc. etc.
> -Bob
>
> **
> Robert W. Gensemer, Ph.D.
> Parametrix, Inc.
> 33972 Texas Street SW
> Albany, OR 97321
> T 541-791-1667, x-6510
> F 541-791-1669
> C 541-760-1511
> rgensemer@parametrix.com <mailto:rgensemer@parametrix.com>
> **
>
> >>> <Goulet.Joe@epamail.epa.gov> 2/15/2006 10:36:34 AM >>>
>
> ----- Forwarded by Joe Goulet/R10/USEPA/US on 02/15/2006 10:33 AM
> -----
>

> Burt

> Shephard/R10/USE

> PA/US
To
> Joe Goulet/R10/USEPA/US@EPA

> 02/15/2006 10:09
cc
> AM

>
Subject
> UCR fish sampling design

> statistics from John Skalski (UW

> statistician)

>

>

>

>

>

>

>
>
>
> Joe,
>
> There are two drafts of the statistical methods used on the Upper
> Columbia River site fish sampling that took place last summer. You'll

> be able to see how the sampling evolved from the differences between
> the two documents, both of which have dates on the title page.
>
> (See attached file: Recommended Design and Analysis for UCR Fish
> Tissue Sampling Program.doc)(See attached file: Preliminary Appraisal
> of UCR Fish Tissue Sampling Plan.doc)
>
> Best regards,
>
> Burt Shephard
> Risk Evaluation Unit
> Office of Environmental Assessment (OEA-095)
> U.S. Environmental Protection Agency, Region 10
> 1200 6th Avenue
> Seattle, WA 98101
>
> Telephone: (206) 553-6359
> Fax: (206) 553-0119
>
> e-mail: Shephard.Burt@epa.gov

Yes; I second Bob's inquiry. We obviously ran into a roadblock at our meeting on & february because we didn't have the collectiveexpertise to address edeatils regardingthe necessary input to the FWM, specifically whether we needed contaminant levels from individual or composite fish samples. The apparent discrepancy was that we all remembered Bruce Hope

teling us at the meetinghe attended with us in Portland that it was very

important to have 10-20 INDIVIDUAL fish analyzed per species. So...who is following this up? How are we getting this outstanding issue addressed??

Thanks,

Chris

--